

LISTING OF CLAIMS

Claims 1-59 (cancelled)

60 (currently amended) A method of generating a position-velocity table for a dynamic system, the method comprising the steps of:

modeling the dynamic system in terms of partial fraction expansion equations;

integrating the partial fraction expansion equations forward in time so as to generate a trajectory for the dynamic system; and

storing the trajectory for the system in the position-velocity table ~~A method according to claim 59, wherein the partial fraction expansion equations which model the dynamic system comprise:~~

$$\begin{aligned} Finalpos &= \sum_{i=1}^N V_i A \Delta t \\ 0 &= \sum_{i=1}^N V_i \frac{Ab}{b-a} (e^{-a(T_{end}-T_i+\Delta t)} - e^{-a(T_{end}-T_i)}) \\ 0 &= \sum_{i=1}^N V_i \frac{Aa}{a-b} (e^{-b(T_{end}-T_i+\Delta t)} - e^{-b(T_{end}-T_i)}), \end{aligned}$$

where Finalpos is the final position of a component of the dynamic system, T end corresponds to a time at which Finalpos is reached, A, a and b are based on the system parameters, Vi are inputs to the system, Ti are the times at which Vi are input and t is a time interval at which Vi are input.

61 (Cancelled)